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**THE NORTH AMERICAN GENERA OF CALYPTRATE
MUSCIDÆ. Paper V.***

ANTHOMYIIDÆ.

BY C. H. TYLER TOWNSEND.

This fifth and last paper of the series presents a synopsis of the North American genera of the family Anthomyiidæ, and concludes the synoptic treatment of the Calyptratæ. Students who contemplate working in this family should consult Dr. R. H. Meade's valuable "Annotated list of British Anthomyiidæ," published in the "Entomologist's Monthly Magazine," vols. xviii, xix and xx, and two supplements in vols. xxiii, xxiv and xxv (see last paragraph of notes to the present paper). The same author's "Notes on the Anthomyiidæ of North America" (Ent. Mo. Mag. xiv, 250-52) should be carefully studied. These latter are mostly reprinted in Osten Sacken's "Cat. of N. American Diptera," 1878 edition. The works of Rondani, Loew and Dr. Johann Schnabl will also prove of much use. Many of these are scattered papers, but most of them are referred to in the O.-S. Catalogue, or in Dr. Meade's annotated list. The following synopsis is based upon the treatment of the genera in Dr. Meade's work just referred to.

Synopsis of North American genera of Anthomyiidæ.

1. Front in both sexes wide, in the ♂ at least one-third the width of the head (Cœnosiinæ)16.
 Front in ♀ wide; in ♂ very narrow, at most one-fifth the width of the head, the eyes always more or less approximated and usually contiguous, or nearly so (Anthomyiinæ) 2.
2. Tegulæ moderately large, scales unequal 3.
 Tegulæ small, scales equal 14.
3. Anterior femora of ♂ toothed below **Hydrotaea** R. D.
 Anterior femora of ♂ simple 4.
4. Proboscis elongate, horny, geniculate, with a pointed, hook-like apex. **Drymeia** Mg.
 Proboscis not so, more or less dilated at apex 5.

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5. Eyes hairy6.
 Eyes bare.....7.
 6. Arista plumose; abdomen oval or oblong, facial ridges bare.
 Hyetodesia Rdi.
 Arista pubescent, or nearly bare.....**Trichopticus** Rdi.
 7. Abdomen with distinct spots8.
 Abdomen without distinct spots9.
 8. Arista plumose, or subplumose.....**Spilogaster** Mcq.
 Arista pubescent, or bare.....**Limnophora** R. D.
 9. Arista plumose10.
 Arista pubescent, or bare.....11.
 10. Anal vein of wing not reaching the posterior margin.....**Mydæa** R. D.
 Anal vein prolonged to posterior margin of wing.....**Hydrophoria** R. D.
 11. Axillary vein curved toward the apex of the anal vein, which is moderately short12.
 Axillary vein not so curved, anal vein long.....13.
 12. Abdomen ovoid and depressed.....**Homalomyia** Rdi.
 Abdomen narrow, subcylindrical, spotted.....**Azelia** R. D.
 13. Posterior tibiæ of ♂ bowed, anal vein not reaching margin..**Ophyra** R. D.
 Posterior tibiæ of ♂ straight, or nearly so; face bare, anal vein reaching margin, first longitudinal vein* not bristly.....**Anthomyia** Mg. s. str.
 14. Arista plumose.....**Hylemyia** R. D.
 Arista pubescent, or bare.....15.
 15. Eyes hairy**Lasiops** Mg.
 Eyes bare, legs black, abdomen of ♂ subcylindrical..**Chortophila** Mcq.
 16. Tegulæ large, scales unequal17.
 Tegulæ small, scales equal; arista pubescent or bare..**Schoenomyza** Hal.
 17. Palpi dilated at extremity.....**Lispe** Latr.
 Palpi not so dilated.....18.
 18. Arista plumose**Caricea** R. D.
 Arista pubescent or bare; abdomen of ♂ clubbed at end, without projecting appendages, small cross-vein opposite end of first longitudinal vein,* front and epistoma not prominent.....**Cœnosia** Mg. s. str.

REFERENCES TO GENERA.

- Hydrotæa** R. D., Myod. 509 (1830); Meade, Annot. list Brit. Anthom. Ent. Mo Mag. xviii, 123.
Drymeia Meig., Syst. Besch. v, 204 (1826); Meade, l. c. xviii, 172.
Hyetodesia Rdi., Dipt. Ital. Prod. vi 110 (1877); Meade, l. c. xviii, 2.
Trichopticus Rdi., Dipt. Ital. Prod. vi, (1877); Meade, l. c. xviii, 173.
Spilogaster Mcq., Hist. Nat. ii, 293 (1835); Meade, l. c. xviii, 62.
Limnophora R. D., Myod. 517 (1830); Meade, l. c. xviii, 101.
Mydæa R. D., Myod. 479 (1830); Meade, l. c. xviii, 27.
Hydrophoria R. D., Myod. 503 (1830); Meade, l. c. xviii, 102.
Homalomyia Bouché, Naturgesch. Ins. i, 88 (1834); Meade, l. c. xviii, 201.
Azelia R. D., Myod. 592 (1830); H. Loew, Ent. Miscel. 1874, 1-41; Meade, l. c. xviii, 221.

* See last paragraph of notes.

Ophyra R. D., Myod. 516 (1830); Meade, l. c. xviii, 173.

Anthomyia Mg. (*s. str.*), Illig. Mag. ii, (1803); Meade, l. c. xix, 31.

Hylemyia R. D., Myod. 550 (1830); Meade, l. c. xviii, 265.

Lasiops Mg., Syst. Besch. vii, 323 (1838); Meade, l. c. xix, 29.

Chortophila Mcq., Hist. Nat. ii, 323 (1835); Rdi., Dipt. Ital. Pr. vi; Meade, l. c. xix, 145.

Schœnomyza Halid., Ent. Mag. (1833); Meade, l. c. xx, 108.

Lispe Latr., Precis, etc. (1796); Meade, l. c. xx, 59.

Caricea R. D., Myod. 530 (1830); Meade, l. c. xx, 60.

Cœnosia Mg. (*s. str.*), Syst. Besch. v, 210 (1826); Meade, l. c. xx, 105.

Synonymy.

Aricia R. D., Myod. 486 = *Hyetodesia* Rdi.—Note. It is perhaps a question whether the generic term *Aricia* should be altogether abandoned.

Egle R. D., Myod. 584 = *Anthomyia s. str.*

Nerina R. D., Myod. 557 = *Anthomyia s. str.*

Atomogaster Mcq., Hist. Nat. ii, 329 = *Azelia*.

Fannia R. D., Myod. 567 = *Homalomomyia*.

NOTES.

Eriphia Meigen, Syst. Besch. v, 206, pl. 44, figs. 16–19 (1826).

Walker (List iv, 961–966) has referred ten species here, all from Hudson's Bay Territory. He is the *only* author who has referred any North American species to this genus. I consequently do not include it in the synopsis, as probably not any of Walker's species belonged here. Nevertheless it may be well to point out its characters. It would run into *Chortophila* in the synoptic table, providing the tegulæ are small and equal as I infer from Meigen's description. Meigen says only "tegulæ small." From *Chortophila* it would differ only by the fact that the latter genus has the anal vein reaching to the posterior margin of the wing. Meigen's figure of *Eriphia* shows the anal vein not reaching the margin. The arista is very finely pubescent, almost bare. The eyes are bare, and contiguous in the ♂. Legs black.

Dialyta Meig., Syst. Besch. v, 208, pl. 44, figs. 20–25 (1826).

Walker (List, iv, 966) has referred one species here with a query. It is also from Hudson's Bay Territory. The genus is not included. Meigen says the tegulæ are "of moderate size." The eyes are remote in both sexes, and the arista is very finely pubescent, almost bare. The palpi are hardly thickened at apex. Small cross-vein is opposite the end of the first longitu-

dinal vein, well beyond the end of the auxiliary vein. Front prominent, face receding. If the scales of the tegulæ are of equal size, the genus would lead in the synopsis to *Schænomyza* Hal. If, as is more probable, the tegular scales are unequal, it would fall with *Cænusia* s. str. I do not consider, however, that Walker's reference of North American species to this and the preceding genus is any proof of the occurrence of these genera in North America.

Trichopticus Rdi.—Bigot refers a Mexican species here (Ann. Soc. Ent. Fr. 1885, 282).

Proboscoidomyia Bigot, Bull. Soc. Ent. Fr. 1883, 35, (1883); Ann. Soc. Ent. Fr. 1885, 266.—This genus is erected for a species from the Rocky Mountains. The important characters, quoted from Bigot's description are: Front of ♂ narrow, eyes not contiguous; palpi filiform; proboscis straight, slender, rigid, bifid at the apex, bent backward, reaching below to the end of the abdomen. If this is an Anthomyiid, the wonderful character of the proboscis will at once distinguish it from all the other genera. It would approach, in this character, the genus *Drymeia*.

Dr. Meade (Annot. list Brit. Anthomyiidae, Ent. Mo. Mag. xviii, p. 1) has given a figure of the Anthomyiid venation, in which he calls the second branch of the first longitudinal vein the auxiliary vein. In the present synopsis I have followed Loew in calling the *first* branch the auxiliary vein. This vein must not be confounded with the axillary vein, which is situated inside of the anal (sixth longitudinal) vein. Dr. Meade also designates the tegulæ (calypteræ) as alulæ. The alula (alulet) is usually understood to be the curved flap-like extension of the wing inside of the anal or axillary angle.

ADDENDUM.

Pegomyia R. D., Myod. 598, is omitted from the synopsis. Dr. Lintner has bred an American species (*P. vicina* Lint. 1st Ann. Rep. Ins. N. Y. 209) from larvæ found mining beet leaves. The genus would come next *Chortophila* in the synopsis, from which it is distinguished by the legs being wholly or in part yellow. The generic determination of Dr. Lintner's species was evidently made by Dr. Meade.

Phorbia R. D., Myod. 559, is also omitted. One species, *P. floccosa*, has also been found by Dr. Lintner mining beet leaves (l. c. 207). The two common species, formerly known as *Anth. ceparum* and *A. radicum* var. *calopteni*, have been referred to the genus *Phorbia*. The determinations are by Dr. Meade. *Phorbia* is nearer to *Chortophila* than is the preceding genus *Pegomyia*. It agrees with *Chortophila* in the legs being black, and is thus separated from *Pegomyia*. It is separated from *Chortophila* by the abdomen of the ♂ being narrow, or oblong and depressed, while in that genus it is subcylindrical.